

10/67-A

Declass Review by NGA.

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31 March 1967

REGISTERED

Reference: Our Letter Dated 18 January 1967 -
"Quotation for Modification of 552
Type Equipments to Include Film Drive
and Encoder Installation" - and
Associated References

Subject: Quotation for Modification of 552/552A
Type Equipments to Include Cam Adjustment,
Encoder, and Film Drive Assist

Gentlemen:

As a result of the submission of referenced letter and a
recent visit by [] for further discussions with respect to referenced
letter, [] is pleased to submit herewith our quotations for
the following:

1. Installation of Cam Adjustment Correction System
to the 552A-101 and (if desired) the 552-101
2. Installation of Encoders and Counters, including
Cabinetry, on 552A-101
3. Installation of Film Drive Assist on the 552A-101
and/or 552-101

The pricing information submitted on previous quotations of the
above is hereby made null and void, and the quotations included herewith
shall be considered valid for sixty (60) days from the date of this letter.
The technical descriptions previously submitted with respect to the above
shall remain valid and are herewith further supplemented to amplify our
technical approach to assure that there will be no misunderstanding in the
future.

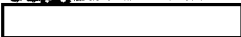
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Exhibit "A", attached hereto, further amplifies and explains the Cam Adjustment feature proposed herein. Exhibit "B", attached, comprises suggested Work Statement covering the Encoder Installation, including  stipulations with respect to the utilization of Customer Furnished Property. The Power Assist Film Drives proposed herein can be considered identical to the Film Drive System presently installed on Machine 552A-104, ready for delivery to your facility.

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This proposal is for installation of the equipment and systems described at your facility. The approach to be taken would be to accomplish as much of the preliminary work and fabrication at  and deliver the modification kits to your facility, and only at that time would the 552A-101 be pulled out of commission and modifications made. It is expected that the actual effort at your facilities would take approximately six (6) weeks. The Film Drive modification on the 552-101 equipment would be conducted subsequently to the above work on the 552A equipment and would take approximately three (3) weeks. The total contract duration would encompass a total of five (5) months for the 552A equipment and an additional month for the 552.

Quotation sheets are included herewith covering the following:

1. Cam Adjustment Modification

This cost estimate is applicable to the 552A-101. If you also desire to have the same modification made on the 552-101, the cost analysis attached should be doubled.

2. Encoder Installation

3. Power Assist Drive for 552A-101

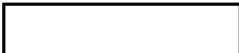
4. Power Assist Drive to be Installed on both 552A-101 and 552-101

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The above quotations are made on the basis of a firm fixed price contract independent of any existing contracts with your facility. Request for progress payments in the amount of 75% is herein made. The

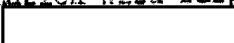
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quotations are also based upon payment within thirty (30) days after installation and acceptance. The acceptance period shall not exceed thirty (30) days.

If you desire any additional information with respect to the above, please do not hesitate to contact  or the undersigned.

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Very truly yours,



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Executive Vice President

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LHB/aw

Encs. (2) Exhibit "A" and Drawings
(2) Exhibit "B"
Cost Estimate Sheets

cc: 

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INSTRUCTIONS TO DELIVERING EMPLOYEE		
<input type="checkbox"/> Show to whom and when delivered	<input type="checkbox"/> Show to whom, when, and address where delivered	<input type="checkbox"/> Deliver ONLY to addressee
(Additional charges required for these services)		

RECEIPT

Received the numbered article described below.

REGISTERED NO. 08006	SIGNATURE OR NAME OF ADDRESSEE (Must always be filled in)
CERTIFIED NO.	
INSURED NO.	SIGNATURE OF ADDRESSEE'S AGENT, IF ANY
DATE DELIVERED	SHOW WHERE DELIVERED (only if requested)

655-16-71548-7 GPO

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EXHIBIT "A"Cam Adjustment Modification

The following statements are to clarify previous descriptions and the expected performance of the cam adjustment mechanism:

1. The cam surface is to be made up of five (5) easily removable straight segments that may be reshaped to correct for future measurement system calibrations.

2. The cam adjustment modification will correct for lead screw errors and minimize errors due to way curvature. On example shown in the attachment, "Principle of Measurement Error Correction using Cam Adjusted Encoder Mount" depicts the right X carriage on the 552 #101 and shows that a +12 to -4 micron error spread for 450mm travel can be reduced to ± 6 micron.

The significance of the remaining errors (shown in Figure 3 of the attachment) are due to way curvature influencing X measurement errors at different Y planes for a nominal X position on the test plate. Another way to visualize this is to imagine these errors as the combined effect of azimuth motion of the "Y" axis upon the elevation motion of the "X" axis.

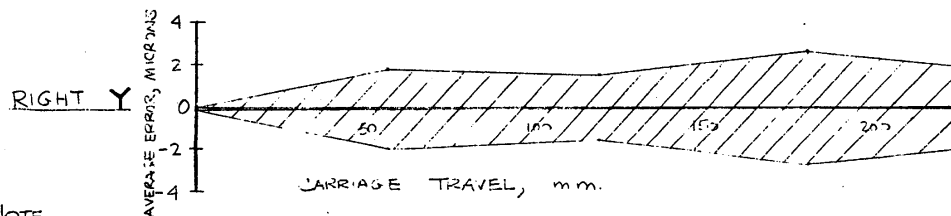
The ultimate corrective effect on measurement error by cam mechanism depends upon the present way distortion and alignments of system. The present status and accuracy of the machine is not known at this time, and ultimate accuracy after correction cam cannot be predicted.

EXHIBIT "A"

Continued . . .

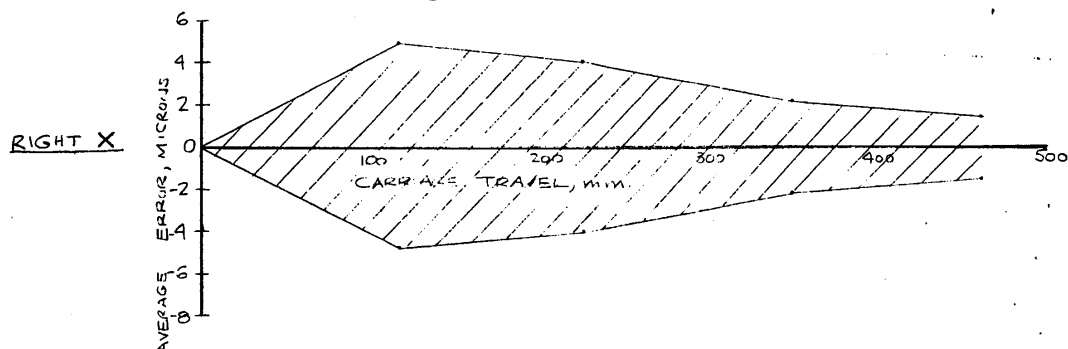
3. The cam mechanism should have repeatability of better than 1 part in 50, as referred to a relative change in an angle between encoder body and the fixed part of its mount for a given carriage position. Since this is a small part of the correction effort of 25 parts in 2500, the uncertainty in the cam mechanism is small.

4. To check the correction function, at any time, the cam may be pulled away from its follower, the encoder held stationary, and a system calibration performed and compared with a run with the correction cam operating. If necessary, cam segments may be shifted and/or altered as future changes in system errors occur and need compensation.



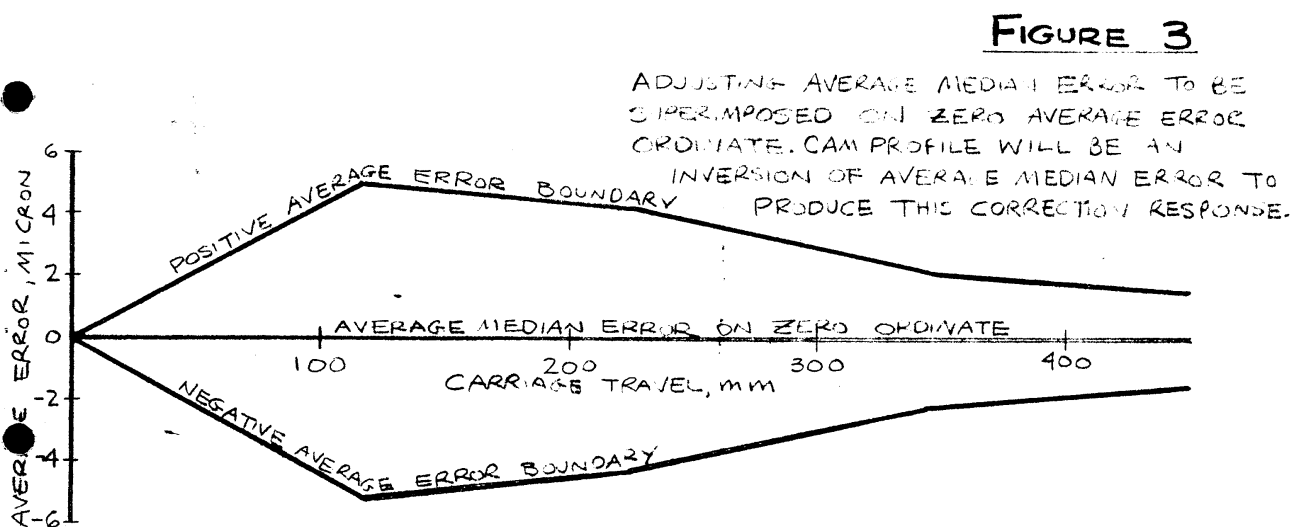
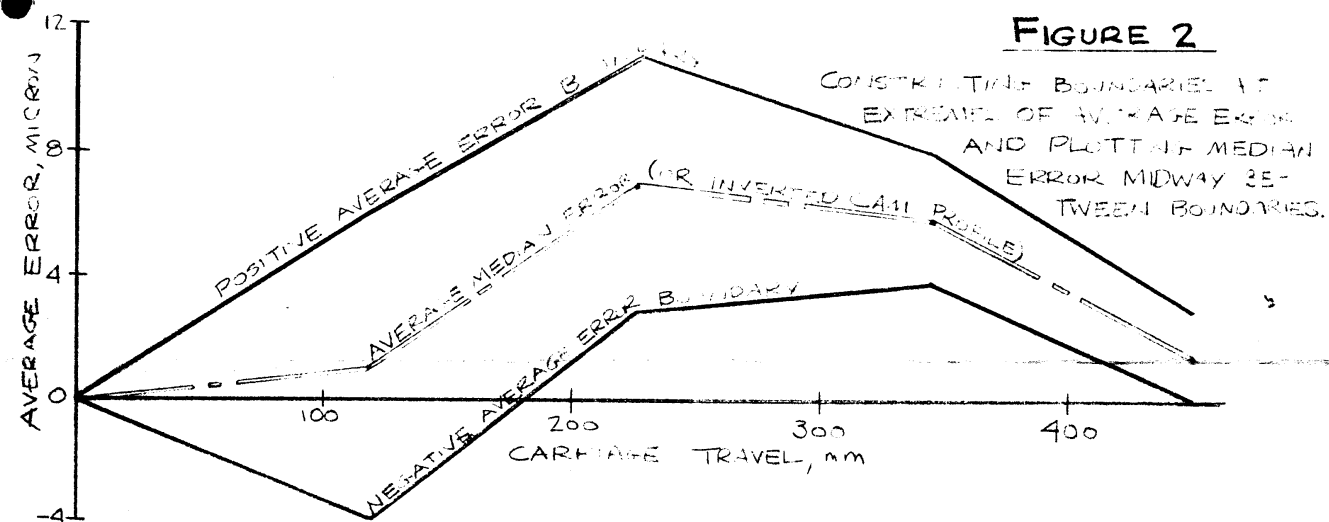
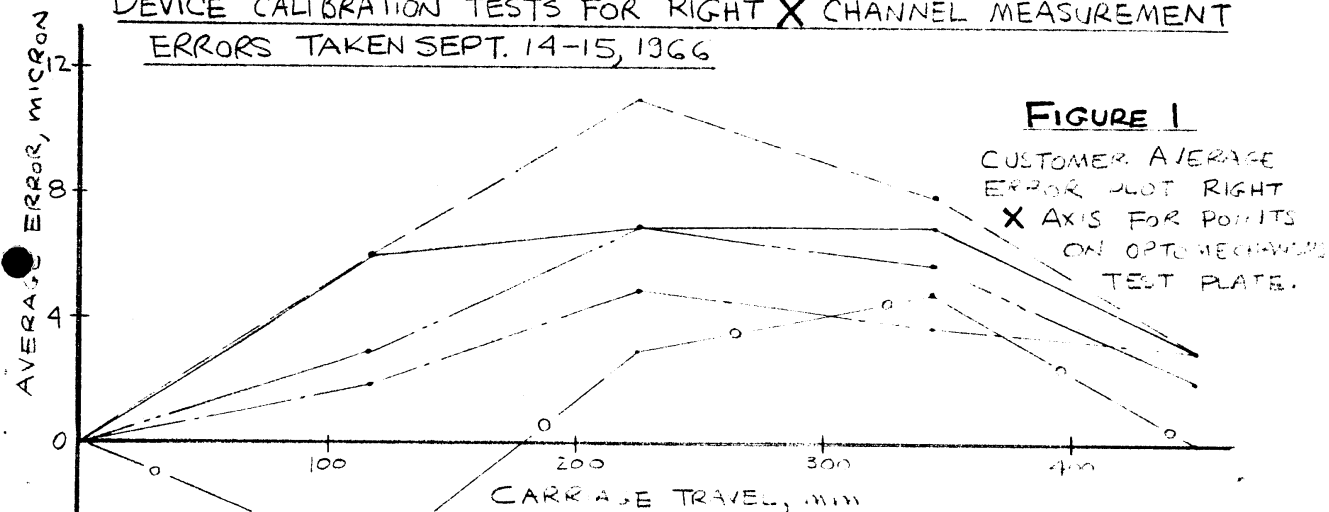
NOTE

- ① BASED ON DATA TAKEN SEPT. 14-15, 1966 USING OPTOMECHANICAL TEST PLATE
- ② AVERAGE OF MEASUREMENT ERROR OF CHECK POINTS ON TEST PLATE LIE WITHIN BOUNDARIES OF CROSS-HATCHED AREA.

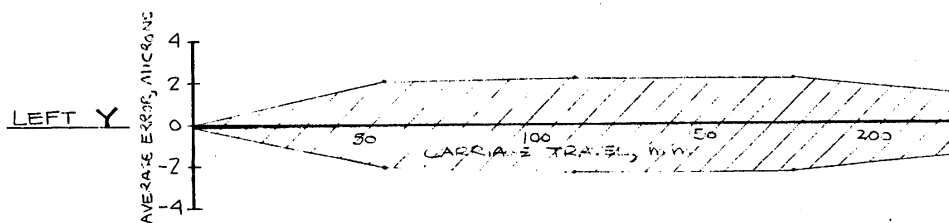


AVERAGE MEASUREMENT ERROR WITH CAM ADJUSTED
ENCODER MOUNT ON RIGHT X & Y AXES
552 POINT TRANSFER DEVICE

DEVICE CALIBRATION TESTS FOR RIGHT X CHANNEL MEASUREMENT
 ERRORS TAKEN SEPT. 14-15, 1966

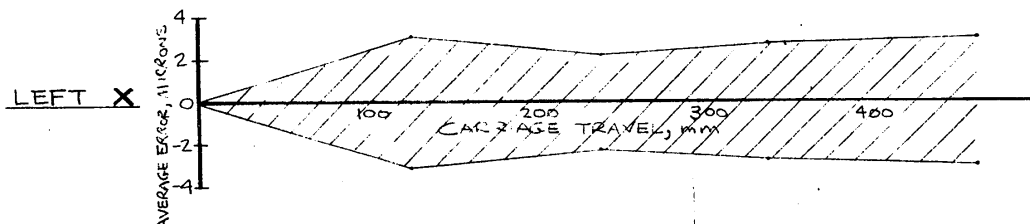


PRINCIPLE OF MEASUREMENT ERROR CORRECTION
 USING CAM ADJUSTED ENCODER MOUNT



NOTE

- ① BASED ON DATA TAKEN 1 SEPT. 14-15, 1966 USING OPTOMECHANICS TEST PLATE.
- ② AVERAGE OF MEASUREMENT ERRORS OF CHECK POINTS ON TEST PLATE LIE WITHIN BOUNDARIES OF CROSSHATCHED AREA.



AVERAGE MEASUREMENT ERROR WITH CAM ADJUSTED
ENCODER MOUNT ON LEFT X & Y AXES
552 POINT TRANSFER DEVICE

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Approved For Release 2005/02/17 : CIA-RDP78B04770A000100070002-3

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EXHIBIT "B"

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Work Statement for Encoder Installation

The following is the work [] will perform and materials that will be supplied to install encoders and counters on 552A -101.

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1. Purchase and fabricate brackets and electrical cables to install four (4) [] Model 27-625 [] Encoders on viewer scanning mechanism lead screws.

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2. Fabricate and purchase necessary components to install [] Switch Assembly, part number 701486-1, with additional provision for an AC power receptacle rear panel for keeping power on [] Synchronizer at all times. This Switch Assembly will include four (4) Dynamic Research Model 15EL-44 modules to interface encoders and counters.

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3. Fabricate and install [] Sloped Front Cabinet, part number 602090, to house [] Model 2825B, Control Panel.

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4. Fabricate and install arm and associated customer's cabinet reinforcements for above Sloped Front Cabinet.

5. Provide services to insure proper encoder signals to counters.

Customer will provide the following and will take responsibility for its debugging, mating and operation:

EXHIBIT "B"

Continued

- 25X1 1. (4) Model 2826C Reversible Counters
- 25X1 2. (1) Model 2827B Synchronizer and Card Punch
Coupler
- 25X1 3. (1) Model 2825B Control Panel
- 25X1 4. All necessary cables to interconnect above units and
to Switch Assembly, except those from the encoders.
5. Suitable cabinet for above, properly equipped
with forced ventilation, panels, casters and clearances for
customer supplied equipment and cables.

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